

REMARKS/ARGUMENTS

Reconsideration of this application in light of the above amendments and following comments is courteously solicited.

The invention as claimed in amended claim 1 is directed to an injection molded resin gear comprising: a substantially cylindrical rim having teeth on an outer periphery thereof, said rim having a thickness (t1) in radial directions; a hub for receiving therein a shaft; a web connecting said rim to said hub, said web having a thickness (t2) in face width directions; and an annular circumferential rib formed on said web between said rim and said hub so as to protrude from said web concentrically with said rim and hub, said circumferential rib having a thickness (t3) in radial directions, wherein a relationship between the thickness (t1) of said rim, the thickness (t2) of said web and the thickness (t3) of the circumferential rib is $t1 \leq t3 < t2$.

Thus, in this injection molded resin gear, the thickness (t1) of the rim is smaller than the thickness (t2) of the web, so that the shrinkage of the rim having the teeth can be decreased. In addition, the circumferential rib thinner than the web is solidified prior to the solidification of the web, and then, the web is solidified, so that the deformation of the web due to the decrease of the diameter thereof can be suppressed by the circumferential rib, which is solidified prior to the solidification of the web, due to the time difference in solidification of the molten resin. As a result, the shrink mark in the connecting portion of the web to the rim, i.e. in the substantially central portion in face width directions of the teeth, can be particularly decreased, so that shape error, such as total alignment error, can be decreased to more precisely form the injection molded resin gear.

Claims 1-9 were rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In order to overcome this rejection, claims 1, 2, 4 through 7 and 9 are amended so as to particularly point out and distinctly claim the subject matter which applicant regards as the invention, and claim 8 is canceled.

Claims 1-11 were rejected under 35 U.S.C. §102(b) as being anticipated by Kimizuka (2002/0014133A1).

Kimizuka discloses a gear made of resin which has a rim having gear teeth, a hub thicker than the rim, and a web connecting the hub and the rim. However, Kimizuka fails to disclose or suggest that the gear has an annular circumferential rib which is formed on the web between the rim and the hub so as to protrude from the web concentrically with the rim and hub. Kimizuka also fails to disclose or suggest that the relationship between the thickness (t_1) of the rim in radial directions, the thickness (t_2) of the web in face width directions, and the thickness (t_3) of the circumferential rib in radial directions is $t_1 \leq t_3 < t_2$. That is, Kimizuka fails to disclose or suggest that, in an injection molded resin gear having the above described circumferential rib, the relationship between the thickness (t_1) of the rim in radial directions, the thickness (t_2) of the web in face width directions, and the thickness (t_3) of the circumferential rib in radial directions is $t_1 \leq t_3 < t_2$. Therefore, Kimizuka fails to disclose or suggest that, in an injection molded resin gear having the above described circumferential rib, the thickness (t_1) of the rim is smaller than the thickness (t_2) of the web, so that the shrinkage of the rim having the teeth can be decreased. In addition, Kimizuka

fails to disclose or suggest that the circumferential rib thinner than the web is solidified prior to the solidification of the web, and then, the web is solidified, so that the deformation of the web due to the decrease of the diameter thereof can be suppressed by the circumferential rib, which is solidified prior to the solidification of the web, due to the time difference in solidification of the molten resin. Thus, Kimizuka fails to disclose or suggest that, in an injection molded resin gear having the above described circumferential rib, the shrink mark in the connecting portion of the web to the rim, i.e. in the substantially central portion in face width directions of the teeth, can be particularly decreased, so that shape error, such as total alignment error, can be decreased to more precisely form the injection molded resin gear. Similarly, Kimizuka also fails to disclose or suggest that any injection molded resin gear as claimed in amended claims 6, 10 and 11. Moreover, Kimizuka fails to disclose or suggest that any injection molded resin gear as claimed in amended claim 9.

Accordingly, it is believed that amended claims patentably distinguish the invention from the prior art.

An earnest and thorough attempt has been made by the undersigned to resolve the outstanding issues in this case and place same in condition for allowance. If the Examiner has any questions or feels that a telephone or personal interview would be helpful in resolving any outstanding issues which remain in this application after consideration of this amendment, the Examiner is courteously invited to telephone the undersigned and the same would be gratefully appreciated.

It is submitted that the claims as amended herein patentably define over the art relied on by the Examiner and early allowance of same is courteously solicited.

If any fees are required in connection with this case, it is respectfully requested that they be charged to Deposit Account No. 02-0184.

Respectfully submitted,
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I, Rachel Piscitelli, hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to:
"Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313" on September 18, 2006.

